

GUIDELINES TO PROPOSE A PWF PROJECT THROUGH THE PWF CALL FOR APPLICATIONS

Physics Without Frontiers (PWF) projects are initiated as proposals submitted through the annual PWF call for applications. The projects should aim to teach, train, and inspire undergraduate and master's students in physics and mathematics from the Global South, broadly interpreted. The ideas for the projects will typically originate from scientists from and/or working in the Global South. The projects are developed in close collaboration with PWF and are undertaken by volunteers. These guidelines are designed to help understand better the format of the projects and the application process in order to make your application more successful. Please bear in mind that this is just a guide and that PWF welcomes innovative projects that think out of the box and traverse ever newer frontiers.

We also recommend that you consult our webpages, and to get an idea of previous and ongoing projects you can see a selection of PWF projects over the past ten years [here](#), and details of our 2023 projects [here](#).

The application process for PWF projects has two stages of selection. The first one begins with this current call for applications. In the first stage it is not necessary to have all the details of your project worked up, the emphasis is on the motivation, goals, and ideas (although details in the proposal are more than welcome!). After the application call ends, the PWF selection committee will choose a number of applications guided by some of the criteria listed at the end of this document and also subject to budgetary constraints. These proposals will then pass to stage two.

In stage two, the PWF team will meet with the successful candidates to discuss the project and invite them to the second stage of the application process, in which the applicants will develop and be expected to present a final proposal of the project covering in detail all the aspects and including the final timetable, list of all the speakers/tutors and a detailed budget estimate. If the final proposal is accepted by the selection committee, the project team will be notified and a budget will be allocated. Following this, the project team will continue to work with the PWF team to deliver the PWF project.

1. WHAT ONE NEEDS TO KNOW ABOUT THE PROJECT BEFORE WRITING THE PROPOSAL

The following points are designed to help clarify the goals of the project and to match the project better to the needs of the students and participants. Please consult them before writing your application.

WHAT GOALS WOULD YOU LIKE TO ACHIEVE WITH THE PROJECT?

Before proposing a project in a given scientific field, it is very useful to analyse the current status of that field in the universities/region/country/space within which the project is intended to take place. What is/are the immediate goals which you would like to target? What are the long-term outcomes that you hope to achieve with the project? For instance, it might be important that students receive some very specific training or computational skills unavailable locally and/or that new topics or courses are introduced to them; perhaps it is important to inform students about opportunities for further education and/or research roles or to help the faculty design new courses or collaborate on curriculum development;

perhaps one is considering engaging an underrepresented group in science and education with widening participation and inclusion in mind; or reaching a region which is lacking resources for challenging reasons. A project can obviously have several goals, but it is important to understand them and build the project focusing on them.

WHO BENEFITS?

When designing a project, it is crucial to have a clear idea who will benefit from it, in order to be able to decide the appropriate level and structure of the activity. Some PWF projects focus on a single well defined group of participants (like final year physics undergraduates at a given university), while others try to attract more varied body of participants (e.g. a school in computational materials science might attract both under and postgraduate students from physics, chemistry and materials science; or a project might take place in several universities in a given region). It is necessary to estimate the background of the targeted participants and adjust the level of the activity accordingly. Obviously, a single well defined group of participants allows for a more focused activity (a uniform background permits more detailed and advanced topics), whilst a wider pool of participants usually requires a more introductory approach. It is important to mention that PWF projects are typically aimed at undergraduate and master's level students.

WHAT TYPE OF ACTIVITY IS MOST SUITED FOR YOUR GOALS?

Within a PWF project, there can be one or more activities planned. PWF activities range from university courses, schools/workshops to roadshows and faculty support. Some information can be also found at <https://www.ictp.it/home/physics-without-frontiers-activities>.

University courses are usually a single course given by a PWF volunteer guest lecturer either in presence or virtually. Depending on the agreement with the university, the course may or may not be graded or mandatory for the accomplishment of the degree requirements. The duration of the course can be anything from only a few lectures to a full year course, depending on need.

Schools/workshops usually cover one field or topic from the very basics to a somewhat more advanced level. They are typically from a few days to a few weeks in duration. We strongly suggest the timetable to include basic notions in the field, especially if the activity is meant for a wider audience. We encourage including some "hands on"/tutorial sessions. Project teams are also strongly encouraged to have secured the lecturers/tutors/instructors prior to submitting the final proposal. In most cases it is possible to combine the in-person sessions with some online ones to enable wider topic coverage and contact with a larger number of PWF volunteers.

Online seminars are one-time or periodic virtual events organised by PWF volunteers. Periodic online seminars might be journal clubs or a series of seminars connected by a topic. Logistically, they are amongst the simplest of activities to organise, but the impact can be significant as it can reach a very large number of participants. Also, given the relatively low time commitment required to give an online seminar, it is often easier to attract high level speakers. These activities obviously require a suitable internet connection and we can sometimes assist with improving network connectivity when appropriate.

Roadshows are amongst the most challenging and rewarding types of activities to organise, where the PWF volunteers are conducting/delivering activities at multiple universities/institutions/sites in a region or country. The very nature of the activity requires significant logistical preparation and is maybe suggested for more experienced organisers. It is

necessary to have a local organiser or contact at each university/node. The topics presented are usually more introductory and motivational.

Departmental/faculty support are projects which have a goal to help faculty and/or academic departments with development. This could, for instance, be collaborating to develop a new programme or course at a university (undergraduate or master's level) or other relevant professional support to faculty members. In these cases the PWF proposal will be made by either representatives of the university and/or faculty members. These detailed nature of these projects is highly case dependent. We note that this is the only type of activity which might not focus solely on undergraduate and master's level students.

Outreach activities usually also take place within the context of a PWF project (like schools or roadshows). If there is a plan to organise an outreach activity, please indicate it clearly in the proposal. Outreach activities might encompass engagement with schools, public events, careers guidance, virtual lab visits and many more.

WHO CAN APPLY?

PWF welcomes applications which aim to teach, train, and inspire undergraduate and master's students in physics and mathematics from the Global South, broadly interpreted. Often, the ideas and motivation for the project will originate by, or be developed with the scientists and institutions in the Global South. The proposers might be scientists and/or students, and do not necessarily have to have previous experience in organising activities and the proposal will be submitted by one person who will be the main designated contact for the PWF team. Each in-person project should have a designated local organiser who does not necessarily have to be the person who submits the proposal, but is clearly consulted and supportive of the project and listed in the proposal.

HOW TO CHOOSE SPEAKERS ?

If you have a clear idea about the topics you would like to have covered in your activity, you will likely already have in mind or be in touch with specific experts to deliver those topics. We strongly encourage you to list these scientists in your proposal. We remark that most of the PWF volunteers that conduct successful PWF projects are early career: post-docs, young researchers or faculty, even PhD students. In exceptional but warranted cases, the PWF team can help engage the relevant speakers if necessary for applications selected at stage one.

2. PWF APPLICATION: HOW TO APPLY

MOTIVATION

Here, please indicate why the proposed project will be useful for your university/region/country/space. Briefly describe the current local situation in the scientific field and what you expect the impact of the project will be. If you have any long-term objectives, it is good to mention them here, what do you want to change, what would be the outcomes.

CONCRETE INFORMATION: DATE/PLACE

Specifying the venues of the activity and the schedule, as well as possible, makes your application stronger. It also indicates that you have already contacted the university (or other relevant institutions/organisations) and indicates that the universities/institutions support the project. Most PWF projects demonstrate concrete local support e.g. accommodation for external speakers or provision of coffee breaks or catering for participants. Demonstrating this adds value to the proposal.

PROJECT COORDINATOR

This is the person submitting the application. The project coordinator is expected to supervise and be responsible of all aspects of the project, from planning and organising to its delivery. They will be in contact with the PWF coordinators and are the key person for each project.

PROJECT PARTNERS

Please list all the institutions and organisations involved in the proposed project. Each institution is expected to have a role in the project, so please indicate it. They will be also mentioned in the poster and social media of the activity, if successful. Collaborating with local industrial partners is also encouraged.

PROJECT TEAM

All people involved in the project constitute the project team. List them all here, their affiliations and any prior interactions with ICTP. Indicate clearly the local organisers, if it not the applicant, and who are speakers. The project team members will likely be contacted by the PWF coordinators in the second stage.

PROJECT ABSTRACT AND DESCRIPTION

Give us the main idea of your project in the abstract, including the goals and targeted participants. In the project description, describe in detail plan of the activity: what the activity consists of, who are going to be the speakers, who are going to be the participants and where the activity will take place (indicate not only the university, but also a concrete venue like computer lab of this department, for example). It is good if you can provide a tentative timetable of the activity. Here, it is also desirable to indicate how you plan to evaluate the success of the project. How will you know if you have achieved your goals?

BUDGET

PWF is not a funding body, but largely **a volunteer network**. We do have a small amount of funding available and we partner with the local universities, industry or other partners to provide travel grants and other forms of support towards the project. Typically our projects are supported at the level of 1,000 - 3,000 euros, usually to provide travel grants and other relevant project expenses or in some cases equipment for online or hands-on activities. Universities or local partners are typically expected to cover refreshments and local costs including accommodation for any visiting volunteers or participants. The grant from ICTP PWF must go to the host institution or to the volunteer in the case of a travel grant. Subsistence is normally not provided. If you already have a clear idea of the costs of your project, try to provide a detailed breakdown of the budget and which partners will fund which costs. Travel details and cost estimates should be provided for each volunteer. If you are unable to provide a detailed budget but are selected to proceed to stage two, the PWF coordinators will assist you in developing the details.

3. SELECTION CRITERIA

This section outlines some of the considerations that go in to selecting proposed projects. Please bear in mind that this is just a guide, not an absolute set of criteria. PWF welcomes innovative projects that think out of the box and traverse new frontiers.

PWF operates on limited resources: budget, time and staff. Some examples of selections that might be made are below.

If we have comparable projects in a Least Developed Country (LDC) compared to a non LDC we would favour proposals in the LDC. Similar sorts of considerations go to educational, scientific and research capabilities, though the two are often correlated. Whilst challenging, we welcome proposals for projects in conflict regions or regions in economic turmoil. Since we support widening participation and equality and inclusion in science we also aim to reach as many participants from underrepresented groups as possible. Hence, we welcome equality, diversity and inclusion (EDI) statements.

Special points in the selection process will be given if the application reveals a clear vision and long-term outcomes of the project. Moreover, if the vision is developed to the point as to have a more concrete plan of the activity (including the topics to be covered and possibly speakers, dates, venues) it is more likely to be ranked highly.

The estimated impact of the project locally and on the national level is one of the key parameters for the selection. Thus, it is beneficial to describe the foreseen impact for every project. However, if organisers plan to use the project to reach wider goals, like *e.g.*, asking for larger national funding in the future, organising a conference as a follow up, finding a collaboration to open an experimental lab, there is a chance to enhance the impact enormously. In such cases, please tell us about your plans and which steps you intend to take to realise such objectives (for instance, it can be planning a meeting with government representatives or appropriate university officials). Further, proposing additional accompanying outreach activities (see above) is also a plus and can increase impact.

PWF projects are usually conducted in partnership with universities/institutions in the Global South. If the institutions are willing to partially sponsor the project (*e.g.* by providing accommodation for the speakers and/or catering), it should be mentioned in the proposal.

Obviously, proposals requesting an inordinately large budget will be less likely to be selected, due to our own limited resources. Please see above and in our webpages for further information.